

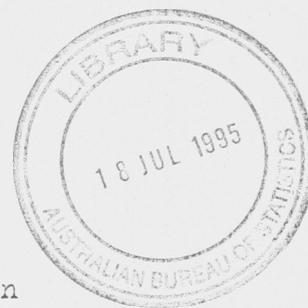
CONFERENCE OF A. & P. OFFICERS

CANBERRA, 5TH - 8TH OCTOBER, 1965

APPLICATION OF A.D.P. TECHNIQUES TO THE 1965-1966 A. & P. CENSUS

AGENDA

1. Introduction
2. Outline of proposal -
  - (a) Need for application of A.D.P. techniques; minimum system; timing (letter of 14th September, 1965)
  - (b) Outline of operation of minimum A.D.P. system (Flow chart)
  - (c) Outline of organization and location of programming, testing, etc. to develop minimum A.D.P. system and computer processing functions.
3. Effect of minimum A.D.P. system on current clerical procedures -
  - (a) Design of 1965-66 A & P form -
    - (i) Numbering of items
  - (b) Collection control:
    - (i) Processing of forms in batches within Police Patrols; batch sizes
    - (ii) Batch numbering system register
    - (iii) Serial numbering and other indicative information (e.g. Parish, L.G.A.) on individual forms.
    - (iv) Finalization of main A & P collection-cut off date, estimation of outstandings.
    - (v) Recording system for receipt of returns, clerical editing, punching of returns.
    - (vi) Processing of area changes (acquisitions, disposals)
    - (vii) A.D.P. and clerical procedures for identification of supplementary collections.
    - (viii) Other
  - (c) Clerical editing -
    - (i) Continuation of existing procedures; clarity of figures for punching; coding of write in items.
  - (d) Computer editing -
    - (i) Arithmetic consistency checks of individual form data.
    - (ii) Procedures for amendment of errors arising out of 3(d)(i)
    - (iii) Print out of aggregates at batch level; clerical editing and amendment.



- (iv) Print out of aggregates of Police Patrol, L.G.A. and State levels; clerical editing.
- (v) Procedures for amendment of errors or inconsistencies arising out of 3(d)(iv); effect of amendment procedures on farm size and type classification.
- (vi) Recording system of returns computer edited, errors detected, corrections made, etc.

4. Aggregation and Tabulation -

- (a) Conversion of State item codes to Commonwealth item codes.
- (b) Conversion of State collection units to State and Commonwealth publication units.
- (c) State and Commonwealth Tabulation requirements - preliminary and final.
- (d) Computer processing of supplementary collections - linking with main A & P form.
- (e) Preparation of flexible programs to make allowance for current differences between State A & P forms and future developments towards more uniform collections.

5. Parallel running of existing clerical system and minimum A.D.P. system.

6. Farm Size and Type Classification

- Method of operation; timing; collection of data on average prices.

7. Liaison between A.D.P. and subject matter statisticians, Central and State offices.

8. Discussion of immediate tasks of State offices and timing.

9. Other matters

10. Conclusion.

CONFERENCE OF A. & P. OFFICERS

CANBERRA. 5TH - 8TH OCTOBER, 1965

APPLICATION OF A.D.P. TECHNIQUES TO THE 1965-66 A. & P. CENSUS

Proceedings of First day - 5th October, 1965

Attendance

F.D. Bagley	} Primary Industry Section, Canberra	E. Scotland,	Vic.
F.J. Colwell		H. Kyle,	Q'ld.
P.G. Howell		H. Vivian,	S.A.
A.R. Bagnall	} A.D.P. Section, Canberra	I. Collins,	S.A.
B.F. Bird		A. McKinnon,	W.A.
T. Keneally,	N.S.W.	A. Keating,	W.A.
R. Britt,	N.S.W.	H. Moore,	Tas.
M. Lister,	N.S.W.		

The following persons also attended during the course of the Conference:-

Mr. I.G. Jones, Mr. H.D. Pridmore, Mr. S. Burton, Mr. D. Ives, Mr. P. Burrett, Mr. J. Maurer, Mrs. J. Speight and Mr. J. Carroll.

Agenda Item 1. Introduction

1. The Conference commenced with an address by Mr. I.G. Jones who, after giving a background to the conference, outlined the benefits which would result from applying A.D.P. to A. & P. statistics. It was recognised that many problems would have to be overcome but he was confident that this could be done by co-operation and co-ordination between all the parties concerned in the Bureau.
2. Mr. Jones was followed by Mr. H.D. Pridmore who outlined some of the specific problems which could be expected. It was stressed that positive thinking by the conference would be required in order to successfully deal with the project in the relatively limited time which was available.

Agenda Item 2. Outline of Proposal

(a) Need for application of A.D.P. techniques.

3. Mr. Bagley outlined the purpose of the conference by reference to a letter sent to the Deputy Commonwealth Statisticians dated 14th September, 1965 (copy attached). All States had agreed to the proposals in principle and it was therefore the business of the conference to study their implications in greater detail with a view to establishing a minimum A.D.P. system for

A. & P. statistics.

(A copy of the Agenda of the Conference is appended).

Agenda Item 2 (b). Outline of operation of minimum A.D.P. system.

4. Copies of an A.D.P. flow chart were distributed, Mr. Bagnall proceeded to explain and comment on this document, arising from which a number of points were raised by members and discussed as follows:-

5. Consideration was given to the level at which interim aggregations should be checked (e.g. batch, police patrol portion, L.G.A. etc.). N.S.W. envisaged that shortage of staff would be a problem in this operation. They would be simultaneously engaged in manual editing procedures. This opinion was supported by most of the States. In view of the extra load of work involved in this operation it was suggested that the arrangements should be made flexible to meet individual state needs and procedures.

6. In response to an A.D.P. suggestion that the previous year's data should be used at police patrol portion level for comparison purposes, Western Australia pointed out that this would not be possible with their Hollerith card system. Such a comparison for W.A. could only be done when L.G.A. aggregation was completed. To do this would not create extra work for data preparation since L.G.A. summary cards already existed. All States agreed that the A.D.P. suggestion would be an extremely useful addition to the project.

7. This discussion led to consideration of the provision of preliminary statistics. It was generally agreed that the computer could help immensely in providing these figures.

8. Western Australia enquired whether a continuous listing of write-in items was possible which could be aggregated. This would enable broad yield comparisons to be considered in dubious cases. It was stated that this would pose no problem.

9. Brief reference was made to the amendment of A. & P. results on the basis of supplementary information collected after the main census. It was intended that the data obtained from supplementary collections conducted at the same time as the A. & P. census would be incorporated in the A.D.P. system (e.g. cereal varieties in Western Australia).

10. To avoid confusion it was stated that the same code number for an item would not be used on the A. & P. form and the supplementary form.

However, most States used the same holding serial number on both A.D.P. and <sup>and</sup>

supplementary forms to assist in identification. With regard to the use of supplementary collected information in a farm size and type classification it was generally agreed that, due to the considerable amount of work involved in incorporating supplementary data onto the main tape for individual holdings, areas obtained from the supplementary collection should not be used for this purpose. The 1959-60 classification was based on information collected on the main A. and P. form.

11. A farmer could receive and complete a supplementary form, even though he had not reported any area being devoted to a particular crop in the current A. and P. form, because he was known to have produced that crop in preceding years. Due to the fact that only a minimal A.D.P. system would be established for 1965-66, no special arrangements would be made to amend area details for individual holdings on the main tape. Area and production data obtained from the supplementary collection would, however, be incorporated at the L.G.A. aggregation level.

12. It was decided that this should be discussed more fully later on in the conference under Agenda items 4(d) and 6.

13. It was generally agreed that having obtained the smallest regional aggregations (e.g. L.G.A.) the system for each State would be designed to produce statistics at the various regional levels required for its own needs.

Special allowance must, however, be made in tabulation requirements for some "derived" statistics (e.g. number of holdings growing particular crops).

A problem common to some States was that an L.G.A. sometimes straddled two statistical divisions. Although this might necessitate two separate aggregations for one L.G.A. it did not appear that this would pose a particular new problem to that already being faced in manual methods of aggregation.

14. A firm assurance was given by A.D.P. that amendments could be made at all stages of tabulation, and if need be back to individual records, whether they arose from checks on aggregates of A. & P. data or on the basis of information obtained from outside sources.

15. Having aggregated at L.G.A. or equivalent level State tapes could then be forwarded to Canberra for extraction of Commonwealth items. The States would thus be responsible for the preparation of statistics up to State level including amendments. Similarly the preparation of State publication material would continue to be the States' responsibility.

16. There was considerable discussion regarding the timing of the processing of tractor data. Some States felt that to treat this data simultaneously with the other A. & P. processing would overload their office resources. On the other hand, separate punching of tractor information would cause a great volume of extra work. In the past some States had allocated staff to deal specifically with this item. It was stated that the A.D.P. programming team could help by programming tractors for the States. States unable to punch tractor information at the same time as the other A. & P. material could do so at a later date if necessary. It was agreed that States should process tractor data, on the lines suggested above, to suit their own circumstances.

17. Western Australia enquired whether supplementary collections would be treated and punched separately. A.D.P. pointed out that although data from different supplementary forms would be punched on the same tape, the computer could produce separate aggregations for each of the items.

18. During consideration of the A.D.P. flow chart reference was made from time to time to the question of batches and their treatment. Detailed consideration of this matter was deferred until later in the proceedings of the conference.

*? Let's talk for Harvest.  
Estimates*

19. Consideration was given to the treatment of key items for the purpose of computer listings for supplementary collection despatch, etc. The basic points to be settled related to timing of the listings and whether these should be listed haphazardly, in order of holding serial number, or on some alternative basis. Most States expressed the wish to have key item listings in some order which would suit their particular State procedure. It was agreed that the key item listings should be made available to the States at the time of the close-off of the collection. It was reported that the provision of key item listings by batches (see Agenda item 3(b)(i) for definition of batch, etc.) would not be entirely suitable for the Queensland wool supplementary collection. The possibility of changing this State's procedure to suit computer control would be considered, failing which A.D.P. might be able to provide computer series numbers and holding numbers which could assist Queensland in preparing its supplementary collection forms for issue in mid-August. Western Australia also reported having reservations about this particular aspect and wished to consider it further. The main

doubts surrounded the receipt of listings in batches rather than receiving them all at one time in L.G.A. order.

Agenda Item 2 (c). Outline of organisation to develop minimum A.D.P. systems.

20. The framework of the organisation was outlined by A.D.P. It would be essential for State and Canberra A.D.P. staff to work as a combined team in order to achieve the required results within the time available. This would result in economies of scale, while at the same time eliminating duplication. A.D.P. personnel would be formed into a team at Canberra within the next couple of weeks. Their first task would be to crystallise the major State requirements common to most States. Individual State requirements, which were accepted as being part of the minimal system, would then be integrated with the general system. Subject matter officers from State offices would be required in Canberra from time to time to discuss problems. Similarly, visits to the States might be entailed for programmers. Constant contact between State subject matter officers and the A.D.P. team was essential. In view of the tight timetable, it was also essential that each State should phase in its responsibilities and activities according to agreed timetables. Frequent reporting of progress between the States and Canberra would be developed.

21. Programme testing would be de-centralised and carried out largely in the States and was expected to proceed from December 1965. 1964-65 data would probably be used to test finalised programmes to reveal unforeseen difficulties. At such time members of the A.D.P. team would return to their State offices to implement the programme. Tasmanian processing would be handled by the Canberra office which would have the advantage of giving Canberra a first-hand experience of the tasks involved. Tasmanian subject matter officers would naturally be involved in the project.

22. Arising out of discussion of this aspect of planning, the following points were clarified.

23. Programmers would be based in Canberra during the design and programming stages and would return to the States for program testing and subsequent implementation of the A.D.P. system.

24. Wherever possible, State subject matter officers would be given a clear direction on points at issue prior to visits to Canberra at any time.

Agenda Item 3. Effect of minimum A.D.P. System on current clerical procedures.

(a) Design of 1965-66 A. & P. form

(i) Numbering of items

25. Mr. Bagley reported that due to time limitations little change was envisaged in the State A. & P. forms for 1965-66. Victoria agreed to amend the tractor section of its form so that the line codings would read 1, 2, 3, 4.

[ South Australia agreed to reinstate line codes in the tractor section. *has been done*

Western Australia would examine the possibility of re-numbering its entire form on a simple line number basis.

26. It was suggested that sufficient spare codes should be allocated to items (e.g. tractors) where the number reported could be expected, in some cases, to exceed the space provided on the form. Also, where the number reported under an item exceeded the space provided on the form, a slip of paper containing the data and codes should be securely attached to the form.

27. Although any major alteration to forms would not be possible in respect of the 1966 collection, it was obvious that some-re-thinking and re-designing of forms would be beneficial at an early date to enable maximum utilization of the computer facility.

[ 28. The States were requested to provide the Canberra office with copies of the forms to be adopted for 1965-66 before arranging final printing of them.

Proceedings of Second day - 6th October, 1965

Agenda Item 3 (b). Collection control

(i) Processing of forms in batches within Police Patrols

29. Copies of the Batch Header Record were distributed to the Conference and its function explained. It was stated that a bundle is defined as a number of batches, and that a batch consists of a section of a police patrol portion. In answer to a query from Western Australia it was stated that batches would have to be sorted into L.G.A. order for that State. Western Australia undertook to examine how it would adapt its existing procedures to the A.D.P. proposals regarding batch processing. The other States envisaged no problem in respect of collection control.

30. For information, Victoria explained that on receipt of forms from a Police Sub-Section, they were sorted according to area groupings (e.g. county, L.G.A., etc.) for which separate tabulations were required within the

same geographical area. This assisted the punching staff when they punched a batch according to the area grouping tabulations required. Victoria also indicated that, in the current mechanical tabulations, the despatch of a final batch for an L.G.A. was notified to the data preparation staff. This was important when producing preliminary livestock figures. It was agreed that this facility would be incorporated into the system for the States.

31. Queensland expressed concern about the possibility of forms being received back from A.D.P. data processing in the wrong order. A.D.P. pointed out that the Bureau had set out standards for the handling of forms within data preparation centres and it was anticipated that no problems would arise from this source.

32. All States, with the probable exception of <sup>SA. and</sup> New South Wales, which does not envisage initial scrutiny of queries at batch level, felt that it would be advisable to control returns in a batch by sequential numbering, which would make it easier to identify returns at the query listing stage. This practice would not affect programming in any way.

Agenda Item 3(b)(ii). Batch Numbering System Register

33. Copies of the Bundle Control Sheet were distributed. An outline of the purpose and use of these sheets was given. In this connection it was emphasised that adherence to a regular time-table was important for the maintenance of a smooth flow of the system. This would involve constant communication between subject matter and processing staff.

34. The views of the States were invited on the optimum number of forms which should constitute one batch. A.D.P. reminded the conference that the number of print-out query lists should be taken into account in deciding batch size. The following views were recorded:-

New South Wales was in favour of batches of fifty.

Victoria. The existence of 2,000 parishes might mean some very small batches, but if the parishes were ignored then batch sizes of 50-100 would be suitable.

Queensland was in favour of batches of 100-200, although a number of batches would be smaller since many police districts contained less than 50 holdings.

South Australia would not accept more than 40 forms in a batch.

Western Australia wanted 40-50 forms in a batch according to L.G.A.

Tasmania favoured 120-150 forms per batch.

35. New South Wales pointed out that the rate of examining forms, not the rate of receipt, was one of the deciding factors with regard to batch sizes. It was generally felt that it might be difficult to standardize batch sizes for all States. Western Australia also expressed the view that standard batch sizes might not greatly assist in checking and comparing data, except for a limited number of items.

36. The States were requested to prepare a note of their requirements on batch checking calculations (yield comparisons, etc.) which would be considered for the A.D.P. system. This would entail preparing ratios and relationships for checking major items at batch level.

Agenda Item 3(b)(iii). Serial numbering and other indicative information on individual forms.

37. Although States had previously submitted details of their serial numbering systems it would be necessary to obtain up-to-date information on this aspect. It was suggested that States should adhere to the identification coding practice at present in use.

Agenda Item 3(b)(iv). Finalisation of main A. & P. collection.

38. The States reported their respective cut-off dates for the finalisation of A. & P. data.

New South Wales Finalisation is a progressive task extending from May to the end of June, as and when police return their lists of land holders.

Victoria Follows a similar practice to New South Wales.

Queensland Finalisation takes place from the end of May to the end of July.

South Australia Finalisation is done on a sectional basis, livestock being closed off at mid-July, and other sections at mid-August.

Western Australia Because information is punched onto cards soon after the receipt of returns, both tasks are virtually finished at the same time - mid-July.

Tasmania Finalisation is a progressive process by police patrol districts from May to the end of July.

39. Brief discussion of the estimating of outstanding returns revealed that the current State procedures would raise no problems from the A.D.P. viewpoint. After consideration it was decided that, bearing in mind the minimal system to be instituted, it would not be practicable to attempt to

measure the effect of estimation of outstanding returns in 1965-66. New South Wales pointed out that it kept a manual record of this aspect from year to year. Victoria and Tasmania enquired whether the computer would be capable of measuring the effect of "new" holdings (arising from special coverage checking work in 1965-66) included in the Census, and were informed that this may be possible.

40. It was considered appropriate to give consideration, at this stage in the discussions, to the requirements of both State and Commonwealth, with regard to preliminary and final figures. The States reported on their practices in this regard as follows:-

New South Wales Comprehensive livestock preliminary figures are prepared as totals of each category only. The estimations of preliminary figures on wheat and sheep were produced on a sample basis of 31 police patrol districts. (The application of a computer system could facilitate this procedure). It was not possible at this early stage to assess the effect of the introduction of the computer system on existing methods. The State conformed to Commonwealth requirements by producing sheep figures by mid-June and provided full livestock figures by the end of July.

Victoria As in the case of N.S.W. this State produces preliminary livestock figures and conforms with Commonwealth requirements with regard to timing. An outline was given of the sampling methods used on the basis of stratified police sub-districts.

Queensland While preliminary livestock figures are produced by the end of July at present, it is felt that the computer methods may help to produce these at an earlier date in the future. Figures for sheep are produced at mid-June.

South Australia Estimates of sheep numbers and ancillary sheep information are produced in June. The following details regarding preliminary figures produced and their timing were reported as follows:-

Livestock completed <sup>end</sup> mid-July - published early August.

Cereals completed <sup>mid - August</sup> at end of July - published <sup>early September</sup> mid-August.

Vegetables and employment completed <sup>end</sup> mid-August - published late September.

Machinery published in October.

Western Australia Sheep numbers and related sheep information is produced by early June. Cereals (wheat, oats and barley) are completed

for State purposes by the end of May. Cattle and pig totals are produced in the first half of June. Full livestock information is produced by the end of July.

Tasmania All livestock figures are estimated by the 15th June.

A statement on sheep is produced at the same time.

41. In reporting the above, the States briefly outlined the methods used to produce preliminary figures. A general discussion ensued on the methods used for estimating and their accuracy, and the value of these figures to users.

42. All States appreciated the need for preliminary estimates. It was therefore agreed that the cut-off dates should be left unaltered at the present time, but that the sampling division should be requested to consider evolving a uniform system of estimating preliminary figures for all States in the future, with a view to improving the accuracy and efficiency of estimation methods and arriving at a uniform cut-off date for all States.

43. There was an exchange of information on the timing of the despatch and the collection of A. & P. forms in each State.

New South Wales Forms are despatched at mid-March and are all received by the police by about 25th March. The 31 patrols which collect the information used for producing preliminary figures are requested to return them by mid-April, and the remainder of the forms are requested by the end of April.

Victoria Forms are sent to the police on 1st March for distribution by the end of March.

Queensland Forms are sent to the police during the first half of March and distributed by 27th March. Forms start flowing in during the second week of April. Because the State Statistics Act specifies return within 30 days of receipt Queensland has considered distributing the forms at an earlier date.

South Australia Forms are sent to the police on 1st March and distributed by the end of March.

Western Australia Forms are posted on 7th March for the north-western area of the State, and on 15th March for the remainder of the State. The return of forms builds up to a peak up to the third week in April. After the first reminder at the end of April and the final reminder during the third week of May there are further flows of returns. Normally about 3,000 informants remain after this time to be followed up.

Tasmania Forms and lists are sent to the police on 8th March. The main bulk of the forms are returned towards the end of April.

Agenda Item 3.(b) (v) Recording system for receipt of returns, clerical editing, punching of returns.

44. It was essential that Canberra should be kept fully informed of progress on receipts, editing, punching, etc. A control pro forma for the use of the States for this purpose would be designed.

45. At this stage, an enquiry regarding the treatment of fractions revealed that it was the general punching practice to convert fractions to two decimal places. States' practice in decimalising fractions were reported as follows. In New South Wales and Queensland punchers would code to decimals; in South Australia and Western Australia it would be carried out by editors; Victoria was not concerned with this aspect because fractions only appeared on supplementary forms which were handled manually; Tasmania would give further consideration to the matter. In answer to a related point A.D.P stated that certain tolerances would be provided in cases where totals did not check due to individual items being reported in fractions. The computer would not reject such cases as errors.

Agenda Item 3.(b) (vi) Processing of area changes

46. It was recognised that manual systems already operating for the processing of data on area changes would be continued under the minimum A.D.P. system being introduced. New South Wales reported that details of areas disposed or acquired are not included in current peg-board aggregations. It was also stated that up-dating for omissions of "total area of holdings" at present involves a twelve month time lag. In cases where a holding reported no area, the previous year's figure could be used for immediate purposes, and amended later in the year after a query had been raised with the informant.

47. A.D.P. considered that it would be useful in the long run to check one year's area data against the next year's. These aspects would be examined during the forthcoming detailed studies into procedures.

Agenda Item 3.(b)(vii) A.D.P. and clerical procedures for identification of supplementary collections

48. It was agreed that key item listings should be produced for all supplementary collections, irrespective of their size or significance. A.D.P. suggested that headings could be inserted over blank columns on the listings for identification and control purposes in the States.

harvest  
estimate  
collection

Agenda Item 3.(b)(viii) Other collection control matters

49. In answer to an enquiry New South Wales reported that it did not use the same code numbers for items on the abridged A. & P. form and the main A. & P. form. Abridged forms were handled as a separate collection, which could then be incorporated in the main A. & P. collection as separate batches.

Agenda Item 3.(c) Clerical editing

50. It was agreed that the States' present clerical editing procedures should be continued.

51. It was confirmed that each State should use its accepted units of reporting for write-in items and that each of such items should have a separate code. Canberra would be required to maintain an up-to-date list of write-in items and their code numbers. The States undertook to provide full details of write-in items.

52. In reply to a Queensland query it was stated that items requiring editing, such as the reporting of lambs marked but no mention of ewes mated, could possibly be ascertained by the A.D.P. editing system (see earlier comments regarding consistency checking). It was envisaged that the Queensland irrigation section could give rise to difficulty in punching, particularly the information on source of power, unless special steps were taken during editing. Queensland was asked to introduce numerical coding and re-writing of the data below the relevant section on the form to deal with this. Western Australia reported that although irrigation data were collected on a similar basis there would be no problem in 1966 as this information would not be tabulated.

Agenda Item 3.(d) Computer editing

(i) Arithmetic consistency checks on individual form data.

53. Reference was made to the arithmetic consistency checks set out in the letter to the States dated 29th September, 1965. It was pointed out that these checks would have to be revised on the basis of the 1965-66 forms. (At this point A.D.P. advised that the suggestion made in the above mentioned letter for States to provide maximum field sizes for checking purposes was not now considered practical.)

54. Copies of the Draft Amendment Advice-Individual Returns form and Draft Error Listing formats were circulated to the meeting and their use explained. During discussions on these drafts the view emerged that there was

a danger that the number of errors contained in the print-out of batches could reach unmanageable proportions due to the possible large number of small arithmetic errors on the form. In this connection A.D.P. explained that it should be possible to arrive at tolerances which, if incorporated into the program, could result in computer acceptance of reasonable discrepancies. Such cases would be listed for scrutiny by subject matter staff. Acceptable tolerances would have to be determined. It was noted that they should relate to each section of the form, (or each total) e.g., in the N.S.W. form, attention would need to be given to tolerances for arithmetic consistency between sheep and lambs by detailed breeds, and the separate dissection into rams, ewes, etc.

55. Victoria pointed out that it checked forms for arithmetic correctness before punching. This practice reduced the number of errors which were revealed at the print-out stage. This task was carried out by one comptometrist and was considered very worthwhile. New South Wales said that clerical editors could carry out the same function in that State. South Australia reported that the same procedure was adopted on rakes by machinists. Other States felt that their shortage of staff might be a limiting factor which would prevent them from adopting this procedure.

56. A.D.P. suggested that States should submit their arithmetic consistency checks envisaged for individual forms, which would be examined with a view to deciding the degree to which error correction was practicable.

Agenda Item 3(d) (ii) Procedures for amendment of errors arising out of

3(d)(i)

57. A.D.P. outlined the method of amending errors arising from arithmetic consistency checks of data on individual forms. The use of error tolerances would eliminate many insignificant errors which could be automatically corrected by the computer. These adjustments would appear on the query list as having been corrected by the computer. This would relieve pressure on clerical staff, while at the same time enabling States to examine computer amendments, judge their significance, and, if necessary, reject or revise the computer amendment.

58. Queensland enquired whether the A.D.P. system would be able to provide an analysis of the number of amendments made and their significance. A.D.P. replied that this could be obtained from the adjustment holding and

amendment cards, which was preferable to incorporating such an analysis into the computer system itself.

59. At this point A.D.P. advised that a manual would be provided on all phases of the work which would include full description of the purpose of the various A.D.P. documents to be used in the project. In addition close contact with the States by subject matter and A.D.P. staff at Canberra would give a clear picture of the modus operandi of the whole system.

Agenda Item 3.(d) (iii) Print-out of aggregates at batch level; clerical and amendment.

Agenda Item 3.(d) (iv) Print-out of aggregates at police patrol, L.G.A. and State levels; clerical editing

60. It was considered that both of these subjects had been fully covered in earlier discussions. It was noted that checking of aggregates for *batches cannot be checked for comparability except when both representatives are* comparability would be carried out at L.G.A. level in Western Australia, at *district* batch level in South Australia, and at the minimum collection control level, i.e., police patrol portions, in the other States.

Agenda Item 3.(d) (v) Procedures for amendment of errors of inconsistencies arising out of 3.(d)(iv); effect of amendments procedures on farm size and type classification

61. It was generally agreed that a decision was required as to whether reported data or amended data should be used for the purpose of farm size and type classification. The meeting undertook to give further consideration to this matter. (See Agenda Item 8.) *amended must be used in final check*

Agenda Item 3.(d) (vi) Recording system of returns computer edited, errors detected, corrections made, etc.

62. A record of returns edited, errors detected, and amendments would provide useful management information on trends and accuracy, as a guide to the A.D.P. system in future years. Furthermore such information could indicate particular items which were prone to error, and could possibly lead to consideration of A. & P. form re-design.

Proceedings of Third day - 7th October, 1965Agenda Item 4. Aggregation and Tabulation(a) Conversion of State Collection Item Codes to Commonwealth Item Codes

63. Copies of sample Commonwealth Item Cards were circulated to the meeting. These cards provide for summarisation of State items to publication requirements at Commonwealth level. Although much work had been done on these previously, considerable work would be involved in up-dating the information contained in them.

64. A brief explanation was given regarding the way in which the Commonwealth grouped State items for the purposes of Commonwealth publication. While States were not necessarily required to change their own methods in 1965-66, the cards would form the basis for consideration, at a later stage, of differences between the States. There might be some re-thinking by States and Commonwealth on the way in which items were grouped and used. The immediate need, however, was to up-date the information on the cards, which would eventually be sent to the States for checking purposes.

65. A discussion followed on the content of States' tapes at the stage when a copy was sent to Canberra for Commonwealth purposes. It was stated that States would programme for their own special publication requirements, but programming for aggregations common to State and Commonwealth could be done at Canberra to avoid duplication.

66. The question was raised as to how confidentiality would be covered by the computer system. It appeared that the computer could make a count of the number of holdings producing each item, an examination of which could indicate items in which confidentiality issues might arise. Nevertheless it was clear that further consideration would have to be given in the future to the question of confidentiality both from the subject matter and A.D.P. viewpoints.

67. The Canberra office would proceed to finalise the Commonwealth Item Cards as soon as possible and the information would be sent to the States when this was completed. The States would be required to check this information and return it to Canberra by December 1965.

68. In response to an enquiry by New South Wales it was stated that the various conversion calculations for Commonwealth needs would not interfere with State programmes. Programming including conversion to Commonwealth publication would be prepared by Canberra A.D.P. officers.

Agenda Item 4.(b) Conversion of State collection units to State and  
Commonwealth publication unit

69. Copies of Appendix 5 of the A.D.P. Feasibility Report on A. & P. Statistics were circulated to the conference, together with a list of coded items required for Commonwealth publication. Appendix 5 (prepared some years ago) contained those Commonwealth items which required to be converted from the State collection or publication unit to the Commonwealth publication unit. The conversion factors would need to be checked and up-dated where necessary. This would be carried out at the Canberra office on the basis of conversion factor information supplied by the States. This data would be needed by December 1965. It was recognised that conversion factors could well be different between States, or indeed between different years in the same State. A general discussion ensued on the various practices and experiences of States with regard to collection and publication units.

Agenda Item 4.(c) State and Commonwealth tabulation requirements -  
preliminary and final

70. Although this topic had been touched on during the earlier proceedings, consideration was given to the summary of A. & P. items collected, classified according to the smallest regional level of publication, which had recently been circulated to State offices. It was explained that the immediate function of this document was to provide an overall pattern of items collected by the States and the minimum level of publication. The coding system adopted in this document was explained. It was envisaged that this document, when up-dated, would prove to be valuable in preparing for the A.D.P. system. It was generally agreed that it was a most useful document particularly from the point of view of providing a reference manual to which States could refer to ascertain information on data published by other States. It was decided that States should examine this document and advise the Canberra office of necessary alterations. A similar document on items derived from the A. & P. census would also be circulated to the States in the near future. New South Wales suggested that it might be more useful (for general reference purposes) if the document could also include an indication of the State publication in which respective items appeared.

71. A.D.P. confirmed that the computer would produce "derived" results representing particular summing and grouping of specific A. & P.

collected items.

72. At this point the discussions reverted to the question of what information would be contained on tapes sent to the Commonwealth by the States and the extent to which the Commonwealth would produce State tabulations. (This subject had previously been discussed under item 4.(a).) The Canberra office would need the State tabulation requirements by early November, 1965. Western Australia sought clarification on how to provide specialised classified information in response to requests from, for instance, State Departments of Agriculture. It was stated that this could be done by the State computer if it was felt that the programming effort involved was worthwhile. Alternatively it could be handled by hand tabulation, as at present. This was a matter of priorities to be decided in each State. It was therefore considered advisable for all States to consider the possible uses to which statistics would be put, other than for publication purposes, and stipulate the form in which they would like their statistics to be tabulated. This would provide flexibility in providing answers to requests for classified information, although it was recognised that provision for meeting this type of request should be kept within reason. The computer could provide a record of items by L.G.A., or conversely L.G.A.'s by items. It was agreed that the States would advise Canberra in respect of their requirements by 1st November, 1965.

73. New South Wales sought confirmation that where the Commonwealth and State needs were identical, although programming would be done by the Canberra assembled A.D.P. team, the actual tabulations would be carried out in the State. This position was confirmed. A further question from New South Wales related to the provision of aggregations at various levels ranging from L.G.A. to State. It was pointed out that as the L.G.A. aggregations were available, then the other levels of aggregation would automatically follow. Should there be a specific aggregation requirement of a State, Canberra should be notified of this as soon as possible in order that it could be incorporated in the programme.

Agenda Item 4.(d) Computer processing of supplementary collections - linking with main A. & P. form

74. Although it had already been agreed that all key items would be listed it remained to be decided which supplementary collections would be

processed by the computer. The States were requested to report their needs in this respect.

New South Wales The main supplementary collection related to the late potato crop. The collection procedure was briefly outlined, and in particular it was stated that as the acreage reported in the supplementary collection differed very little from the acreage reported on the A. & P. form, the latter data would be suitable for a farm size and type classification. After discussion it appeared that it would be better to exclude this supplementary collection from the A.D.P. system for the time being and process it manually. If the supplementary collection revealed any significant difference in acreage as reported in the main census then amendments could be fed back into the A.D.P. data. Consideration could be given at a later date to incorporating the processing of the collection into the A.D.P. system. Acreage and production data obtained from the supplementary collection would be included in A.D.P. aggregates of production at L.G.A. level.

The other supplementary collections on cotton, broom millet, and tobacco should be excluded from the A.D.P. system as they are more in the nature of specialised collections. Finalized data from the collections would, however, be incorporated in the A.D.P. system at the L.G.A. level.

Queensland After an outline had been given of the supplementary wool collection, it was decided that this should be excluded from the A.D.P. system for reasons of timing. Similarly it was agreed that the supplementary collections of peanuts and tobacco were unsuitable, at this stage, for inclusion in the A.D.P. system.

During these particular discussions reference was made to amendments to A.D.P. data on the main census arising from subsequent supplementary collections. It was emphasised that Canberra should be informed of all amendments which were made to State records and tabulations.

South Australia No supplementary collections were undertaken.

Western Australia Favoured the inclusion of the supplementary collection of apples and pears in the A.D.P. system although it was recognised that the substituting of supplementary data into the A. & P. data on tape might be a problem. As the supplementary collection related to growers with 25 trees or more it was suggested that supplementary information on production and trees, plus an estimate for those growers with less than 25 trees would be

appropriate for Commonwealth aggregation. After discussion, it was agreed that A.D.P. processing of this collection would be dealt with if possible, by a program prepared in that State office.

The supplementary collections on viticulture and potatoes seemed appropriate for A.D.P. processing, and might be similarly programmed in the State office. Later consideration would be given to whether the supplementary collection on cereal varieties was suitable for inclusion. This would depend on the timing of punching of supplementary information. The supplementary cotton collection would not be included.

Tasmania Although discussions at the Conference tended towards the view that the supplementary collections on fruit and potatoes would be included in the A.D.P. system, after further consideration by A.D.P. and Tasmanian offices it was subsequently decided that these collections would not be processed within the general A.D.P. System. All supplementary collections would continue to be done manually.

Victoria All the supplementary collections (60,000 cards) were at present processed manually. On past experience there was little variation between areas reported for crops on the A. & P. census form and supplementary forms, and for this reason the census data would, in the main, be satisfactory for size and type classification purposes.

A brief account was given of the procedures applied to the Victorian supplementary collections. For the present it would be satisfactory to continue to cope with these supplementary collections by manual processing, even though this strained staff resources, rather than face the complexities involved in incorporating the collections in the A.D.P. system. Acreage and production data could be adjusted on the A. & P. tape information at L.G.A. level in the light of supplementary information collected for incorporation in the tape held in Canberra.

Canberra commented that sampling techniques could possibly be applied, with advantage, to supplementary collections in the future. It was thought that the extent to which A. & P. data on tape was amended in the light of supplementary data should be a matter of priority to be examined by Victoria, and reported to Canberra. This applied particularly to farm size and type analysis.

75. It was clarified by Canberra that acreage and production data

obtained from State supplementary collections would be included in A.D.P. aggregates at L.G.A. level.

Agenda Item 4.(e). Preparation of flexible programmes etc.

76. A.D.P. pointed out that by using a centralised team of programmers at Canberra in the initial stages of planning, a basic, flexible programme could be evolved, which could be adapted in certain cases to accommodate changes in the future, and would minimize future re-writing of the program. By the same token additional information might be handled by the same basic programme in the future with a minimum of amendment. However, output was less flexible than input. Careful thought and planning regarding the form of information required from the computer was therefore critical at all stages.

77. Victoria sounded a note of warning that, while all States received requests for specialised information, it would be unwise to use the computer to produce specialised information which might be required. This was a facility which could be developed in the computer at a later stage after the basic system had been established:

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Agenda Item 5. Parallel running of existing clerical system and minimum A.D.P. system

78. New South Wales stated that further consideration would have to be given by the State office before a decision could be reached regarding a parallel run of both systems. The procedures which would be involved in a parallel run by this State were briefly related. The maintenance of the N.S.W. form in one piece until all computer queries (up to Police Patrol level) were resolved would be essential for the A.D.P. system, and this necessity would complicate peg-board adding. It was pointed out that the test run of the A. & P. programme on 1964-65 data would be an important factor in ensuring the success of the application of A.D.P. to 1965-66 collection. Canberra office pointed out that it was important that the allocation of resources to a parallel run should not jeopardise the priority given to the application of A.D.P. during the first year.

79. This matter was left on the basis that New South Wales would give further consideration to the feasibility and advisability of conducting a parallel run.

80. South Australia felt, at this stage, that it would have the resources to conduct a parallel run. The need for it would be examined at a

later stage as the A.D.P. project developed over the next few months.

Agenda Item 6. Farm size and type classification

81. While previous consideration had been given to this subject by the Conference, two points remained to be settled.

1. The effect of not relating adjustments back to individual forms in certain circumstances.
2. Whether to classify item quantities (as well as number of holdings) as was done during the 1955-56 classification.

Both points gave rise to extensive discussion.

82. The general opinion was that adjustments to A. & P. data would make little difference to the material used for the classification. However, both New South Wales and Victoria undertook to further examine the significance of adjustments to A. & P. data for this purpose. Tasmania added that green peas was the only item where adjustments might fluctuate considerably, and this was being investigated. not so

83. It appeared advisable to exclude item quantities from the classification for 1965-66, but that this aspect should be re-examined at the time of the next classification. This would require putting production figures from supplementary collection amendments, etc., back on to all individual holding records on tape.

84. A discussion followed on the treatment of cattle, under the new definitions, for the purposes of farm classification by type. In particular, consideration should be given to the principles on which to classify calves raised on predominantly dairying farms, which were sold or used for the production of veal. Another matter requiring attention, was the treatment for classification purposes of house cows kept on farms mainly engaged in producing cattle for meat.

85. The rules applied to the 1959-60 classification should be crystallised, and reported on, together with any other rules which would be applied in the States to subjects, such as cattle classification by type, which had arisen in the A. & P. Census since that time. It was important that A.D.P. should be aware of State publication requirements for the classification before design of the system commenced.

86. The preparation of valuation data (for holding type classification purposes) would be an extensive task for the State offices. Western Australia

stated that this data would not be available until early 1967. In view of the manpower requirements for this operation it did not feel justified in undertaking this work at the present time until a clearer indication was available on type classification. The other States envisaged no difficulty in completing evaluation data by October 1966, although research staff resources might be called upon to complete the task. Western Australia was informed that calculation of the average values from value of production data could be a suitable project for its own A.D.P. Branch. In view of this possibility, or the alternative of using research staff, Western Australia agreed to look into the possibility of preparing this information by October, 1966.

87. The conclusions which emerged from these discussions on the farm size and type classification were that while deficiencies were recognized in the procedures adopted in 1959-60, the 1965-66 classification should be conducted on similar lines, while at the same time making allowance for subsequent developments in A. & P. statistics, such as the new cattle classification. It was added that the States should advise A.D.P. of their output requirements in respect of the 1965-66 farm size and type classification.

Agenda Item 7. Liaison between A.D.P. and subject matter Statisticians,  
Central and State Offices

88. The importance of good communications and contact between all parties concerned in the application of A.D.P. to A. & P. statistics had been stressed throughout the Conference. A brief outline was given on how this would be achieved. State subject matter officers would be required to come to Canberra periodically, individually or in groups, depending on the nature of the business to be discussed. This would probably start at the end of October. The length of the visits would probably be 2-3 days, for which up to 2 weeks notice would be given. The availability of State officers would be checked in advance. It was envisaged that such visits could take place approximately every 3 weeks, although the exact frequency would depend on progress and events. States would also be advised in advance of the topics to be discussed during such visits. An appropriate record and documentation would be kept of the discussions.

89. While telephone communication between Canberra and State offices would be necessary it was recommended that these should mainly relate to

non-policy matters. It would be important for all telephone conversations of substance to be confirmed in writing, and disseminated. Generally all correspondence should be handled by Canberra and State subject matter officers, but two copies should be made available for the separate use and information of Canberra and State A.D.P. staff. All written communications should be handled by a responsible officer, to the exclusion of unofficial communication at lower levels. A.D.P. would naturally be responsible for communications on technical matters.

90. The A.D.P. team in Canberra would be formed within 10-14 days after the end of the Conference and was expected to work in Canberra until December, when the systems design should have taken shape.

91. Periodic reports by A.D.P. on programming progress would be useful. A.D.P. would evolve a programmers' progress and control system related to an integrated timetable which would form the basis of the periodical reports to the States. These reports would be on an overall, rather than a day to day, basis. In this connection it was emphasised that the preparation and planning for the application of A.D.P. must be dealt with in a smooth, integrated manner by all A.D.P. and subject matter officers concerned. Only by maintaining a high standard in this regard would the project be carried out successfully in the relatively little time available.

Agenda Item 8. Discussion of immediate tasks of State Offices and timing

92. A note which had been prepared on the immediate tasks, arising from Conference discussions, which would require attention by State offices was circulated. The various items were discussed briefly and the timing agreed as follows:-

- (i) The States would provide a list of all State tabulation requirements, including those for farm size and type, by 1st November, 1965.
- (ii) Finalised copies of the 1965-66 A. & P. forms (plus abridged forms) and supplementary collection documents would be made available to Canberra by 25th October, 1965. The Canberra office undertook to examine these documents immediately on receipt and notify States of any issues arising.
- (iii) The States would provide by 25th October, 1965 a schedule of items to be decimalised. States were asked to indicate on the finalised A. & P. forms referred to in (ii) above, those items which were likely to be reported in fractions.

(iv) Details would be required of the methods adopted by States to numerically identify A. & P. forms, including procedures to establish numerical area sequences in form reference numbers. Western Australia had already submitted a statement, and the other States were requested to do so in writing by 25th October, 1965.

(v) The States would need to decide which commodities should be checked for feasibility at the batch level, and devise suitable area/production relationships for this purpose<sup>by 25th October, 1965</sup>. This also related to conditional holding counts.

At this point Queensland raised a problem regarding the relationship between the area and number of fruit trees, which also appeared to affect New South Wales. It was suggested that early consideration be given to this problem in the respective State offices in order that any necessary amendments might be incorporated in the A. & P. forms.

(vi) The States undertook to advise Canberra of the arithmetic tests and error tolerances which they required to be incorporated in the A.D.P. system for the purpose of producing error listings. This information would be required by 15th November, 1965. Much thought and work would be entailed in up-dating the consistency checks based on the 1964-65 census procedure which had recently been notified to the States by Canberra.

(vii) Lists of items for which consistency checks should be made, together with an indication of the level at which the checks should be applied, would be required by 15th November, 1965. It was added that A.D.P. could include in the programme the facility for a comparison of any particular level aggregation in 1964-65 with 1965-66. In this connection, punching of 1964-65 aggregates for the desired level of comparison would be the responsibility of the States.

(viii) The document "Summary of all A. & P. items collected" would need to be up-dated by the States on the basis of the 1965-66 collection, by 1st December, 1965.

(ix) Victoria would advise Canberra of the differences between A. & P. key item results and supplementary collection results by 25th October, 1965.

(x) The States agreed to provide Canberra, by 1st December, 1965, with the farm "typing" procedures as applied in 1959-60 to determine the rules to be applied in 1965-66 for A.D.P. classification to farm size and type. Particular attention should be given to the implications of the current cattle dissection.

15/12/65  
(xi) The factors used by States in converting their collection units to State publication units, and to Commonwealth publication units, would be required in Canberra by 1st December, 1965.

Agenda Item 9. Conclusion of Conference

93. As the specific subjects itemised for concluding remarks on the Agenda had already been covered, Mr. Bagley summed up by generally gauging the progress which had been made over the 4 days. He felt that the positive discussion and full co-operation which had been evident throughout augured well for good progress in the establishment of A.D.P. procedures to A. & P. statistics. In the relatively little time available good foundations had been laid for the preparation and introduction of the A.D.P. system. The Canberra office intended to circulate a full note of the proceedings to State offices within a week of the Conference.

94. The members of the Conference unanimously supported Mr. Bagley's concluding remarks.